

What is claimed is:

1. A chemically defined medium for fermentation culture of a strain of the genus *Candida*, which comprises 1-10 g/ℓ of urea, 1-10 g/ℓ of potassium diphosphate, 0.01-1 g/ℓ of magnesium sulfate, 0.1-10 mg/ℓ of $\text{MnSO}_4 \cdot 4\text{H}_2\text{O}$, 0.1-10 mg/ℓ of
5 $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$, 0.1-10 mg/ℓ of $\text{NaMoO}_4 \cdot 2\text{H}_2\text{O}$, 0.1-10 mg/ℓ of $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$, 0.1-10 mg/ℓ of $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$, 0.1-10 mg/ℓ of $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$, 0.01-5 mg/ℓ of H_3BO_3 , 1-100 mg/ℓ of $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, 0.1-10 mg/ℓ of ascorbic acid, 1-100 mg/ℓ of biotin, 1-100 mg/ℓ of choline, and 0.1-10 mg/ℓ of pyridoxine.
- 10 2. A process for producing xylitol in high yield by recycling culture of a strain of the genus *Candida*, which comprises the steps of:
inoculating the strain in a xylose-containing medium and culturing the strain in the xylose-containing medium in a bioreactor;
releasing a culture from the bioreactor and introducing a fresh xylose-
15 containing medium to the bioreactor continuously;
separating the strain and a culture filtrate from the culture; and
recycling the strain to the bioreactor and recovering xylitol from the culture filtrate.
- 20 3. The process of claim 2, wherein the strain of the genus *Candida* is *Candida tropicalis* or its mutant strain.
4. The process of claim 2, wherein the xylose-containing medium is the chemically defined medium of claim 1 or a complex medium.

5. The process of claim 2, wherein the culturing is performed by a fed-batch culture or a batch culture.

6. The process of claim 5, wherein in the fed-batch culture, the medium is
5 gradually supplemented with xylose so that the concentration of xylose is maintained at 40-50g/ℓ on the basis of the medium.

7. The process of any one of claims 2, 4, 5, and 6, wherein the culturing is performed at an agitation speed of 400-600rpm.

10

8. The process of claim 2, wherein the separation of the strain and the culture filtrate from the culture is performed by a vacuum microfiltration system or a centrifuge.

15

9. The process of claim 2 or 8, wherein the separated strain is concentrated to a density of 10-100g/ℓ and recycled.